

Use of Remotely Sensed Data to Characterize Upwelling Conditions on the Washington Coast in Relation to Harmful Algal Blooms

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Satellite remote sensing imagery is being used to identify and characterize upwelling conditions on the coast of Washington State, with a particular focus on detecting conditions associated with harmful algal bloom events. Domoic acid poisoning is a human health and economic concern for the coastal communities of Washington, causing frequent closures of shellfish harvesting. Blooms of phytoplankton, including the domoic acid-producing diatom *Pseudo-nitzschia*, appear to be associated with a semi-permanent eddy bordering Washington and British Columbia that is observed in satellite imagery during extended upwelling events. Using sea surface temperature and ocean color imagery, edge detection algorithms are being used to define the extent of upwelling relative to large bloom events that have occurred in recent years. This research is part of a larger Olympic Region Harmful Algal Bloom (ORHAB) partnership that includes implementation of in-situ sampling and oceanographic modeling to develop long-term monitoring tools for the management of these blooms.